

BOTANY OF THE PHELPS' VENEZUELAN GUAYANA EXPEDITIONS—II³²
UAIPAN-TEPUI, ESTADO BOLIVAR

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Part II of our reports on the Phelps' Guayana expeditions deals with some of the plants collected on Uaipán-tepuí by Kathleen D. Phelps and Charles B. Hitchcock during January 15-February 15, 1948.

Numbers indicating the cited exsiccatae are those of Phelps and Hitchcock unless otherwise indicated.

VELLOZIACEAE

Barbacenis uaipanensis Maguire, sp. nov. (Fig. 117.)

Caudex simplex erectus, 3-5 dm longus ca. 1.5 cm crassus, vaginis laevibus tecte adpressis imbricatis persistentibus; laminis 3-5 cm longis rosulatis, deorsum 5-7 mm latis, anguste lineari-lanceolatis acutissimis conspicue 5-7-nerviis, subtus inter nervos glanduloso-punctatis; floribus terminalibus numerosis 25 vel pluribus, sessilibus vel subsessilibus; bracteis foliaribus 2-3 cm. longis, chartaceis prominenter 15-20-nerviis, floribus plus-minus longioribus; segmentis perianthii anguste lanceolatis, 8-10 mm longis, tubo 8-10 mm longo; staminibus 6; ovario ca. 10 mm longo 3 mm crasso, obscure trigono glabro, intus nigro; seminibus 2-3 mm longis, fusiformibus albidis medio affixis.

TYPE: erect, post-flowering, locally common, occurring to the exclusion of other flowering plants, embedded in moss and wet humus, windy exposure, summit of Uaipán-tepuí, Bolívar, Venezuela, at 1900 m alt., January 27, 1948, 388 (NY).

Our plant, because of its six stamens, is referred to the genus *Barbacenia*. This is in accord with the distinction made by Pax³³ placing the members of this remarkable family with 6 stamens in the genus *Barbacenia*, and those with stamens more than 6 (usually 15, 18, 24, or 30) in the genus *Vellozia*; and is further in accord with the treatment of Henrard³⁴, vigorous student of American Velloziaceae.

Barbacenia, as so determined, is apparently otherwise unrecorded for the Guayana Highland. Its closest relative in this area is the widespread *Vellozia alexandrinae* (Schomb.) Goeth & Henrard, characteristic of submontane savannas and montane slopes, particularly as concomitant with or sequential to fire.

ROSACEAE

Licania hitchcockii Maguire, sp. nov. (Fig. 118.)

Arbor parva; ramulis teretibus tenuibus puberulis; foliis 4-5 cm longis 2.5-3.0 cm latis (superioribus minoribus 1.0-2.5 cm longis 0.5-1.5 cm latis), elliptico-ovatis vel elliptico-obovatis breviter lateque acuminatis acute subcoriaceis vel subchartaceis, supra glabris pallidis nitidisque venis impresso-prominulis, subtus

³² Part I of this series was issued in Bol. Soc. Venez. Ci. Nat. 14: 1-15 (1951).

Foot-notes and figures in this paper are numbered consecutively with those of "Anatomy of Guayana Mutisieae" (Mem. N. Y. Bot. Gard. 9:441-476).

³³E. & P. Nat. Pfl. ed. 2, 15a: 433. 1930

³⁴Blumea 2: 339-384. 1937.

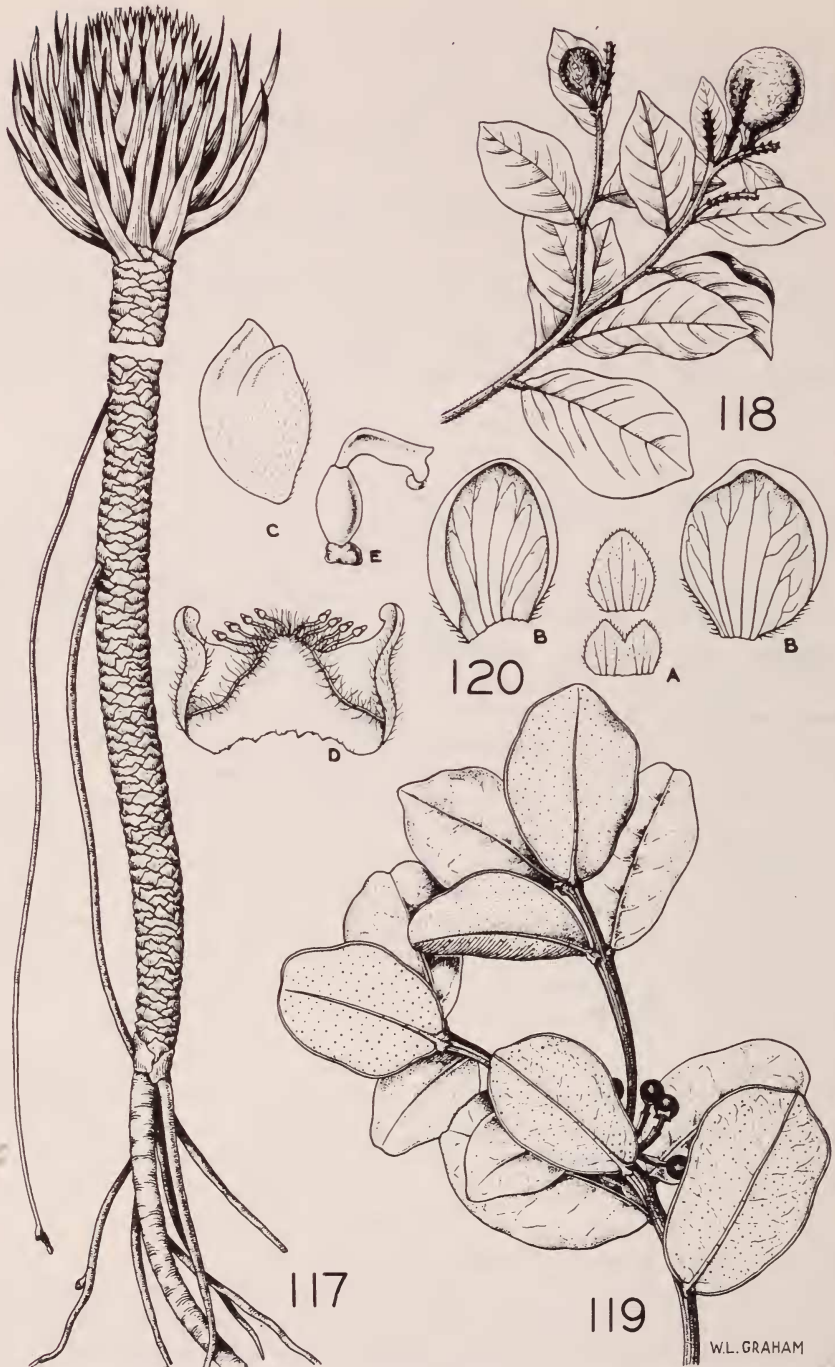


FIG. 117. *Barbacenia uaipanensis* Maguire. Habit, $\times \frac{1}{2}$. FIG. 118. *Licania hitcockii* Maguire. Fruiting branch, $\times \frac{1}{2}$. FIG. 119. *Ilex brevipetiolata* Steyermark & Wurdack. Fruiting branch, $\times \frac{1}{2}$. FIG. 120. *Monnina uaipanensis* Wurdack. A, outer sepals, $\times 5$; B, alae, $\times 5$; C, keel, $\times 5$; D, staminal tube and lateral petals, $\times 5$; E, pistil, $\times 5$.

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pannoso-fulvo-tomentosis, nervis lateralibus 6-7-jugis prominentibus brunneis costisque exceptis; petiolo ca. 2 mm longo, crasse puberulo-glanduloso aliquantum rugoso transverse rimosoque; stipulis ca. 2 mm longis, falcato-subulatis crassis puberulis caducis nodo adnatis; inflorescentiis spicatis fulvo-velutinosi 1-2 cm longis, bracteis minutis; floribus ca. 2.5 mm longis strigoso-velutinosi sessilibus; fructibus 2.5-3.0 cm longis 1.5-2.0 cm latis, obovatis vestitis granulato-compactis flavo-viridibus.

TYPE: small tree to 8 m high, with pale green fruit, one of two tallest on cumbre, immersed in dense shrub growth 1 m high, 1700 m alt., February 1-15, 1948, Uaipán-tepuí, Bolívar, Venezuela, 407 (NY).

Licania hitchcockii belongs without question to the *L. macrantha* Hook. f. complex, but has become sharply differentiated, most conspicuously by the small elliptic leaves and short spicate inflorescences.

POLYGALACEAE

Monnina uaipanensis Wurdack, sp. nov. (Fig. 120.)

Frutex; ramis juvenilibus sparse patenti-hirsutulis glabrescentibus; foliis coriaceis ovalibus vel subobovatis, 4-6 cm longis 2-3 cm latis, apice rotundato vel subacuto base cuneata vel rotundato-cuneata margine anguste revoluta, juvenilibus strigulosis glabrescentibus (per venulis exceptis); raceni pauci 2-3-aggregati bracteis inconspicuis (ad 1.4 mm longis) caducis; floribus 4.5-5.0 mm longis, pedicello 1.0-1.2 mm longo puberulo; sepalis exterioribus dorso puberulis duobus inferioribus 1.3-1.5 mm longis ovatis 1/3-1/2 connatis 1-3-nerviis, sepalo superiore 2.0-2.1 mm longo 1.5-1.6 mm lato 5-nervio, alis 4.5-4.8 mm longis 3.7-3.8 mm latis obovato-suborbicularibus 7-nerviis glabris marginibus subtus ciliolatis; carina 4.7-4.8 mm longa 3.0-3.2 mm lata extus sparse puberula; petalis lateralibus marginibus lateralibus ciliatis extus puberulis intus marginibus lateralibus puberulis marginibus apicalibus glabris; staminibus 8, filamentis glabris vaginae margine ciliata extus costa media puberula aliter glabra; ovario ca. 2.0 mm longo, glabro; stylo 2.8-3.0 mm longo, statim sed non subito geniculato glabro, base 0.5 mm apice 0.7 mm lato; stigmatibus apice superiore tuberculato apice inferiore acuto; drupis ovalibus, 6 mm longis 4 mm latis glabris reticulatis exalatis.

TYPE: bush, rare, small purple flowers, grows straight up in single stalk above nearby bushes, about 4 m high, cumbre 1900 m alt., Uaipán, Bolívar, Venezuela, February 1-15, 1948, 368 (NY). Paratype: Uaipán, 1600 m alt., Cardona 2006.

Related to *M. cacumina* N. E. Brown and *M. duidae* Blake, but distinguishable from the former by smaller flowers and oval leaves, from the latter by larger leaves, and from both by the style which is immediately but not abruptly geniculate above the ovary. In both related species, the basal part of the style is erect to semi-erect for a distance of 0.6-1.2 mm above the ovary.

AQUIFOLIACEAE

Ilex brevipetiolata Steyermark & Wurdack, sp. nov. (Fig. 119.)

Arbor ad 10 m alta; ramulis longitudine striato-subsulcatis sub lente pulverulo-pilosulis; foliis perbreviter petiolatis, petiolo 1-2 mm longo, crasso rugoso, lamina integris glabris crasse coriaceis ovalibus vel subobovatis, apice obtuso subrotundato vel perbreviter apiculato, base subobtusa vel rotundata, 4.0-6.0 cm longa 2.8-4.2 cm lata, subtus modice punctulatis; costa media supra tenuiter insculpta vel plana subtus expressa, nervis lateralibus utrinque 6-10 supra

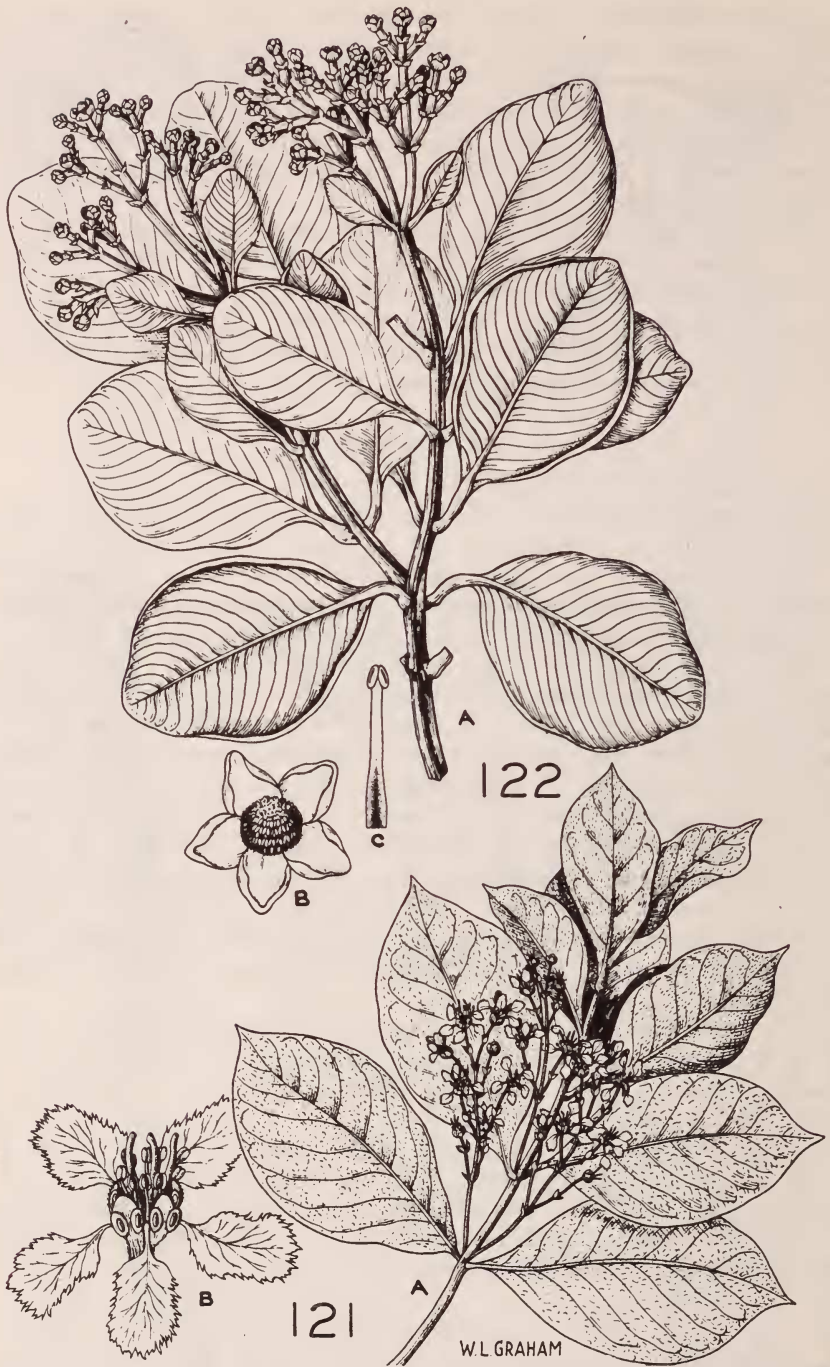


FIG. 121. *Tetrapteris phyllandenophora* Maguire & Steyermark. A, flowering branch, $\times \frac{1}{2}$; B, flower, $\times 2$. FIG. 122. *Clusia cardonae* Maguire. A, flowering branch, $\times \frac{1}{2}$; B, staminate flower, $\times 2$; C, stamen, $\times 10$.

obsolete prominulis vel obsoletis subtus obsolete prominulis; inflorescentiis femineis ad ramulorum hornotinorum basin singulatim congestis vel in foliorum axillaribus solitariis 1-3-floris; floribus ignotis; pedunculis fructiferis pilosulis ad 7 mm longis, pedicellis 3-4 mm longis, cum calycibus pulverulo-pilosulis; drupa immatura globosa, 5.0-5.5 mm diam., stigmatem prominulo vel vix prominulo coronato, in sicco minute rugoso 4-vel raro 5-pyrenifero.

TYPE: tree to 10 m, abundant in little forests, none in bloom, sabana, west slope of Uaipán-tepuí at 1400 m alt., Bolívar, Venezuela, January 27, 1948, 347 (NY). Paratypes; Cerro Uaipán, 1700 m, F. Cardona 2062; tree 30 feet tall; leaves coriaceous, deep green and shining above, pale green below, punctate below; fruit dull green, rich woods, vicinity of "Misia Kathy Camp" on mesa between Ptari-tepuí and Sororopán-tepuí, Bolívar, alt. 1615 m, Steyermark 60290.

Related to *I. spruceana* Reiss. and *I. duidae* Gleason. From the former it may be distinguished by the very short petioles, longer peduncles, 1-3-flowered cymules, and non-sulcate globose fruits; from the latter by the slightly shorter petioles, puberulous branchlets, peduncles, and pedicels, and larger globose drupes not tapering apically.

MALPIGHIACEAE

Tetrapterys phylladenophora Maguire & Steyermark. Subg. *Mischolepis* Niedenzu, sect. *Macrophyllaries* Niedenzu. (Fig. 121.)

Frutex parvus; ramulis teretibus 2-3 mm diam. adpresso-fulvo-sericeis; foliis oppositis, laminis oblanceolatis, 6-8 cm longis (3) 3.4-4.5 cm latis, supra puberulis vel glabrescentibus subnitidis, subtus dense fulvo-sericeis glandulis sessilibus submarginalibus, 6-7 jugis venis lateralibus prominulis, apice breviter acuminato vel cuspidato, base subacuta, petiolis 6-8 mm longis, eglandulosus, stipulis minutis, minus 0.3 mm longis; inflorescentiis sericeis axillaribus foliis brevioribus paucifloris, ramulis unifloris, bracteis lanceolatis acutis, ca. 2 mm longis, bracteolis ovatis vel subrotundatis, 2-3 mm longis; sepalis ovato-oblongis vel subrotundatis, 3-4 mm longis, subcarnosis prominenter biglandularibus. laminis extus sericeis, intus glabris; petalis flavis, 8-10 mm longis, unguibus ca. 2 mm longis, laminis suborbicularibus fimbriatis; staminibus 10, filamentis inaequalateralibus, sepalis oppositis longioribus angustioribusque, antheris 1.0-1.3 mm longis; pistillis 3, ovariis hirsutulis quadrialatis (immaturis), stylis glabris erectis, ca. 4 mm longis, apice dorso apiculato, stigmatem discoideo.

TYPE: bush 2 m high with yellow axillary flowers, petals 5 fimbriate, leaves especially the young ones soft, silvery, rare, 1400 m alt., Uaipán-tepuí, Bolívar, Venezuela, February 10-15, 1948, 426 (NY). Paratypes: arbusto de flores amarillas, crece en las orillas de un arroyo Kavanayén, Guayana, Venezuela, May 28, 1947, Lasser 1785; shrub 10 feet tall, leaves subcoriaceous, dull green above, gray-green below, on large mesa, Kavanayén northwest to Río Karuai, alt. 1220 m, Bolívar, Steyermark 59381; liana on shrubs, fruit wings red, 8 km northwest of Kavanayén, Steyermark 60451. The fruits of this specimen are described as follows: samara sericeo-hispidulous, body suborbicular 3-4 mm long, lateral wings subequal membranous red, 2 superior wings obliquely erect, obliquely linear-lanceolate the apex obtuse entire or subentire 13-14 mm long 2.5 mm wide, the 2 inferior wings obliquely linear-ob lanceolate 14-16 mm long 3.0-3.5 mm wide, alata dorsal semi-orbicular-annuliform subentire 2.5-3.0 mm wide scantily sericeo-pubescent below.

Our species seems to fit into sect. *Macrophyllaries* of subg. *Mischolepis*, but to be without immediate relatives in Venezuela, other than perhaps *T. oleifolia* (Benth.) Niedenzu from Mt. Roraima.

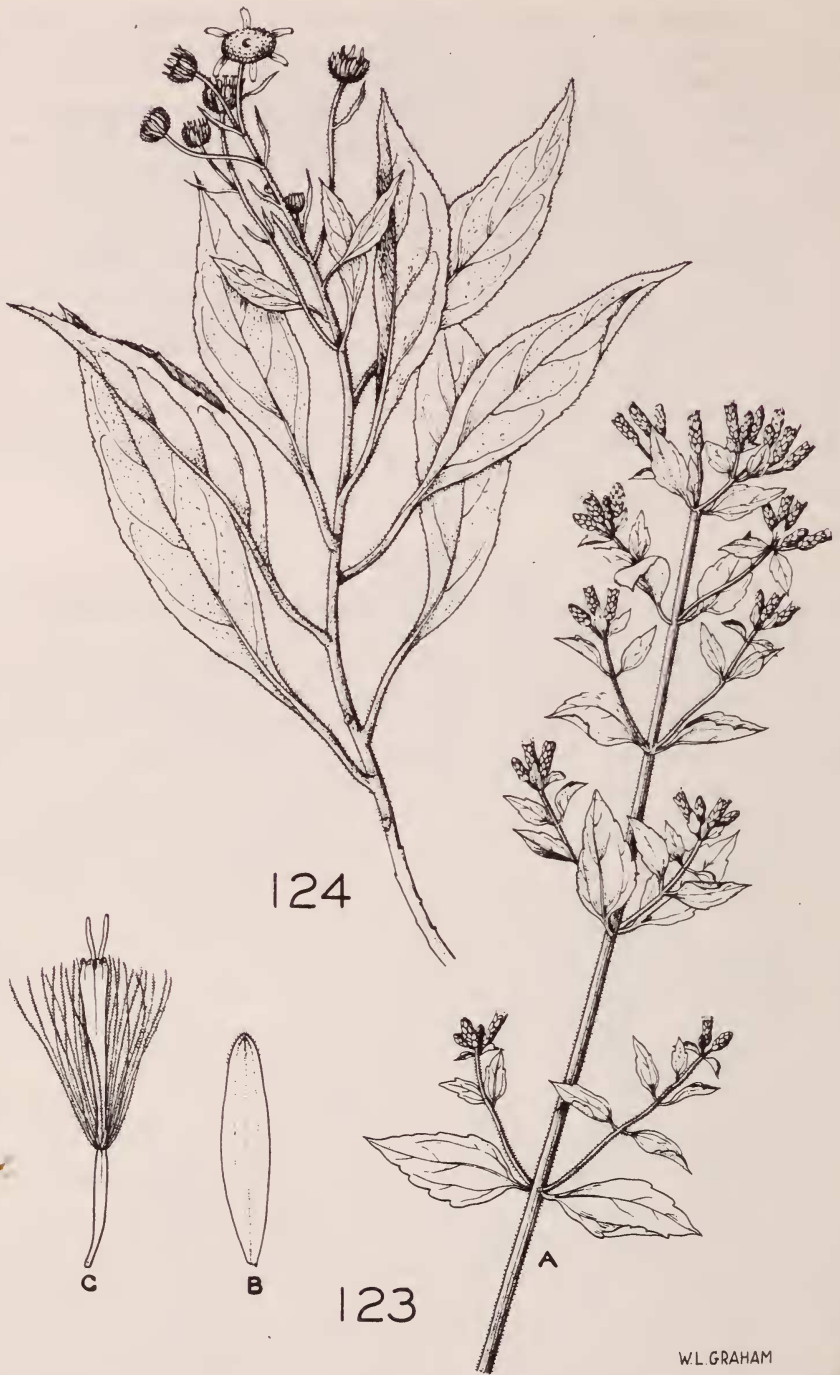


FIG. 123. *Eupatorium thunii* Rob. A, flowering branch, $\times \frac{1}{2}$; B, phyllary, $\times 4$; C, flower, $\times 4$. FIG. 124. *Verbesina pilosa* Maguire & Wurdack. Flowering branch, $\times \frac{1}{2}$.

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GUTTIFERAE

Clusia cardonae Maguire sp. nov. sect. *Criuva* Benth. & Hook., subsect. *Eucriuva* Engl. (Fig. 122.)

Arbor parva; ramulis in sicco quadrangulatis ca. 4-5 mm crassis, internodiis 1-3 cm longis; foliis coriaceis obovato-ellipticis vel rhomboideo-ellipticis, 5-8 cm longis 3.5-4.5 cm latis, apice acuto, base acutiuscula, marginibus valde revolutis, costa prominente apice extenta, nervis 2-3 mm distantibus prominulis, petiolo 18-20 mm longo; inflorescentia terminali botryoidea subcompacte multiflora, 8 cm longa, ramulis carnosis in sicco acute angulosis; bracteis primariis foliaribus, 2-3 cm longis, bracteolis carnosis carinatis deltoideis acutis, 2-3 mm longis; floribus masculinis: sepalis 4 decussatis carnosis, ca. 2 mm longis, exterioribus late ovato-orbicularibus obtusiusculis, interioribus obovato-orbicularibus cucullatis; petalis (4) 5 obovato-orbicularibus, ca. 6 mm longis ca. 6 mm latis, concavis; staminibus 40-50, filamentis 1-2 mm longis 0.5 mm crassis, liberis, antheris 0.8-1.0 mm longis, loculis lateraliter dehiscentibus connectivo lato excedentibus; floribus femineis ignotis; fructibus ignotis.

TYPE: tree to 5 m high, leaves thick, flowers with waxy-white petals; most abundant and prominent tree on the 1700 m cumbre, always growing with other vegetation of similar height; all trees flowering at the same time, Uaipán-tepuí, Bolívar, Venezuela, February 1-15, 1948, 412 (NY). Paratype: Cerro Uaipán, 700 m, Río Caroní, Guayana, arbol 6 m alto, Noviembre 26, 1946, *F. Cardona* 2064.

Because of its 4 decussate sepals, 5 small petals, and numerous free stamens, this conspicuous tree of Uaipán-tepuí summits must be assigned to the *Eucriuva* of sect. *Criuva*. It apparently has no known immediate relatives in the Gran Sabana region.

COMPOSITAE

Verbesina pilosa Maguire & Wurdack, sp. nov. sect. *Saubinetia*. (Fig. 124.)

Frutex 2 m altus; caulibus piloso-tomentosis exalatis; foliis alternis, laminis lanceolatis, 12-14 cm longis 2.8-3.5 cm latis, serrulatis denticulis 5-11 mm distantibus chartaceis penninerviis, supra modice pilosis pilis base tuberculatis, subtus dense canescenti-pilosis, base attenuata, apice acuto, petiolis canescenti-pilosis, 1.0-1.5 cm longis; inflorescentia corymbosa, pedunculis dense pilosis; capitulis 10 mm altis 15 mm diam.; involucre 2-3-seriato, bracteis oblanceolatis pilosis, 7-11 mm longis; floribus ligulatis 5-6, 9.0-12.0 mm longis, laminis ovatis 9-11 mm longis, apice 3-denticulato, floribus tubulatis ca. 75-80, tubulo ca. 5.5 mm longo, apice sparse piloso, base per 1.5 mm contracto modice puberulo, lobis ca. 0.8 mm longis; achaeniis maturis anguste alatis sparse hispidulis, aristas 2 hispidulissimis 5.0-5.3 mm longis.

TYPE: cumbre of 1200 m, Uaipán-tepuí, Bolívar, Venezuela, February 1-15, 1948, 424 (NY).

Related to *V. sordescens* DC. from Brazil and Paraguay, but distinguished, by the distinctly petiolate leaves, somewhat larger involucre bracts, denser indumentum, and smaller number of ray flowers. The leaves closely resemble *Sydow* 752 from Ecuador (*V. inuloides* Hier.) but the achene awns in that specimen are much shorter and the leaves are more noticeably tuberculate on the upper surface. Another close relative is *V. schomburgkii* Schultz-Bip. subsp. *eligulata* Maguire & Wurdack.

Calea lucidivenia var. *lucidivenia*. *C. lucidivenia* Gleason & Blake, Brittonia 3: 193, as to type. 1939.

The var. *lucidivenia* is entirely glabrous. The leaves and outer involucre bracts are devoid of punctate glands. Besides *Tate* 1324 (type, NY) and *Tate*

1363 (NY) from Auyán-tepuí, the typical variety is now in addition known by the following.

Salto Eutocuamini, Rio Caroní, Guayana. *Cardona* 1770 (US); Sta. Elena, Guayana, *Lasser* 1287 (NY); Kavanayén, Guayana, *Lasser* 1823 (NY); Sta. Elena, Guayana; *Tamayo* 2706; Kavanayén, *Steyermark*, 59408 (type of *C. lucidivenia* f. *lanceolata* *steyerm.*), 60299; *Maguire & Wurdack* 34009; Rio Apongúo, *Maguire* 33636-

C. lucidivenia var. *punctata* *Maguire & Wurdack*, var. nov.

Folia subtus et bracteae exteriores involucrium prominenter punctato-glandularibus, alioque var. *lucidiveniae* similis.

TYPE: shrub with yellow flowers, very common on the slope and cumbre at 1900 m alt., Uaipán-tepuí, Bolívar, Venezuela, January 27, 1948, 336 (NY). Paratypes; Uaipán-tepuí, 1800 m alt., *Cardona* 2032 (NY, US), Cerro Guaiquinima, Alto Río Paragua, Guayana, alt. 1800 m; *Cardona* 957 (NY); *Maguire*, 32776, 32819, 32853, 33000-A.